

REMARKS

In the Office Action, the Examiner¹ rejected pending claims 1-21 under 35 U.S.C. § 103(a) as being unpatentable over Shibata et al. (U.S. Patent No. 5,371,373, hereafter "Shibata") in view of Shimada et al. (U.S. Patent No. 5,348,902, hereafter "Shimada"). Applicants have amended claims 1-21 and added new claims 22-34. Applicants respectfully traverse the rejection.

Applicants have amended independent claims 1, 7, and 15 to more appropriately set forth aspects of the present invention, and have amended dependent claims 2, 3, 5, 6, 12, and 13 to conform to the language of their respective amended independent claim. In addition, Applicants have added claims 23-34 to set forth additional aspects of the present invention. Applicants have also amended claims 2-6, 8-14, and 16-21 to correct minor typographical errors and improve form.

Applicants traverse the Examiner's rejection of claims 1-21 under 35 U.S.C. § 103(a). To establish a *prima facie* case of obviousness, all the claim limitations must be taught or suggested by the prior art. See M.P.E.P. § 2143.03. Additionally, three basic criteria must be satisfied. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine references. Second, there must be a reasonable expectation of success. Third, the prior art reference (or references when combined) must teach or suggest all of the claim elements. See M.P.E.P. § 2143. Moreover, the requisite teaching or suggestion to make the claimed

¹ The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

combination and the reasonable expectation of success must both be found in the prior art, not in Applicants' disclosure. *See In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). *See* M.P.E.P. § 706.02(j).

Applicants respectfully traverse the rejection under 35 U.S.C. § 103(a) because the cited prior art fails to teach or suggest each and every element of claim 1. Amended claim 1 recites "Character Projection (CP) apertures having shaping holes of the charged beams having shapes *of one hundred or more characters having shapes* of the standard cells." Emphasis added. Claim 1 also recites a "standard cell library recording means for recording a standard cell library," which contains information configured to design "patterns of the systems," and also for "recording the standard cell library having first placement positions of the shaping holes on said CP apertures related to the standard cells corresponding to the shaping holes."

In the Office Action at the Examiner asserts that Shibata teaches all of the limitations of independent claim 1 except for "(a) [t]he use of a standard cell library where cells having functions, shapes of outlines, and input/output positions are recorded;" "(b) [c]onducting logic synthesis;" and "(c) [p]lacement and routing." Office Action at page 6. The Examiner contends that these three elements are taught by Shimada. Office Action at 6. Applicants respectfully disagree.

Shibata teaches that a "repeated pattern (which is also called a cell in some LSI-CAD systems" is supplied from LSI CAD/DA system 1 (col. 4, lines 24-27, lines 28-33). Thus, according to Shibata, the LSI CAD/DA system 1 stores cells. These cells are then *processed* to generate a second transfer mask 21 ("the repeated pattern processed by the EB lithography data generation system 3 is generated a second

transfer mask 21”, col. 4, lines 39-43). Shibata is silent, however, as to storing position information of shaping holes in LSI CAD/DA system 1 in addition to the cells. Shibata, therefore, necessarily fails to teach the claimed “standard cell library recording means ...having first placement position of the shaping holes on said CP apertures,” as recited in claim 1.

Moreover, Shimada teaches that “cells ...[including] basic cells of a standard cell system ... are registered in a library “ (col. 1, lines 18-21). Shimada, however, does not teach that position information of shaping holes are also stored in the library. Rather, a “layout of these cells is *prepared through an automatic cell preparation program ...*” (emphasis added) (col. 1, lines 21-24). Thus, Shimada also fails to teach the claimed “standard cell library recording means ... having first placement positions of the shaping holes on said CP aperture,” as recited in claim 1. Accordingly, claim 1 is allowable for at least this reason.

Furthermore, the cited prior art does not teach an apparatus which uses “shapes of one hundred or more characters having shapes of the standard cells,” as recited in claim 1. Shibata specifically teaches using “the unit pattern 22,” which is “formed by *five* lithography patterns 62 to 66,” and that the patterns are restricted to “basic patterns,” which are represented by “a rectangle, a parallelogram and a trapezoid.” Emphasis added, col. 5, lines 39-42. Shimada does not cure the deficiencies of Shibata in this respect. Instead, Shimada teaches a method of “designing cells,” wherein cells are “demarcated into a logic function portion and an input/output portion.” To the extent that the demarcated logic and input/output portions of Shimada correspond to the standard cells recited in claim 1, the cited prior art does not teach or suggest “shapes of one

hundred or more characters having shapes of the standard cells,” wherein “a standard cell library [has] an information configured to design the patterns of the systems by using the standard cells having functions, shapes of outlines, and input/output positions of the standard cells,” as recited in claim 1. Thus, the cited prior art of Shibata and Shimada do not teach or suggest each and every element recited in claim 1, and claim 1 is also allowable for this additional reason.

Given the above reasons, Shimada and Shibata fail, alone or in combination, to teach or suggest each and every element recited in claim 1. Therefore, the Examiner has not established a *prima facie* case for rejecting claim 1 under § 103(a). In addition, claims 7 and 15, though of different scope, recite limitations similar to those of claim 1 and are also allowable for at least the reasons presented above with respect to claim 1. Further, claims 2-6, 22-26, and 34; claims 8-14 and 27-29; and claims 16-21 and 30-33 respectively depend from claims 1, 7, and 15, and are allowable at least due to their dependence. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw the rejection under 35 U.S.C. § 103(a) of claims 1-21, and allow all of pending claims 1-34.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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